

## CLAIMS

1. Exothermic elements for hyperthermic treatment having, as a main component thereof, ferromagnetic layers coated outside nucleus particles,  
wherein said ferromagnetic layers comprise an oxide having a magnetic domain structure mainly formed of at least one of a single domain and a pseudo-single domain.
2. Exothermic elements for hyperthermic treatment as defined in claim 1, wherein said ferromagnetic layers substantially consist only of ferromagnetic crystal grains chemically bonded to one another.
3. Exothermic elements for hyperthermic treatment as defined in claim 2, wherein said crystal grains have shape anisotropy.
4. Exothermic elements for hyperthermic treatment as defined in claim 1, wherein said ferromagnetic layers have, as a main component thereof, one of gamma hematite, magnetite, strontium ferrite and zinc ferrite.
5. Exothermic elements for hyperthermic treatment as defined in claim 1, wherein said exothermic elements are spherical or approximately spherical, and 10 to 200 $\mu$ m in diameter.
6. Exothermic elements for hyperthermic treatment as defined in claim 1, wherein said ferromagnetic layers have a volume ratio at least 3.5 times said nucleus particles.
7. Exothermic elements for hyperthermic treatment as defined in claim 5, wherein said ferromagnetic layers have cracks formed therein, said cracks having a maximum width corresponding to at most 3% of diameters of said exothermic elements.

8. Exothermic elements for hyperthermic treatment as defined in claim 5, wherein said nucleus particles have a mean diameter of 0.1 to 10 $\mu$ m, a coefficient of variation in particle size thereof being at most 15%.
9. Exothermic elements for hyperthermic treatment as defined in claim 1, wherein said nucleus particles are formed of silicon oxide.
10. Exothermic elements for hyperthermic treatment as defined in claim 1, comprising metal oxide thin film coated on surfaces of said exothermic elements.
11. Exothermic elements for hyperthermic treatment as defined in claim 10, wherein said metal oxide thin film is formed of one of silicon oxide, titanium oxide, gamma hematite, magnetite and iron hydroxide.
12. Exothermic elements for hyperthermic treatment as defined in claim 10, wherein said metal oxide thin film is porous.
13. Exothermic elements for hyperthermic treatment as defined in claim 1, comprising only an inorganic material.
14. Exothermic elements for hyperthermic treatment as defined in claim 1, wherein said exothermic elements have a heating value of 5 to 30 [W/g] when placed in an AC magnetic field with a frequency of 100kHz and at 15.92 to 29.45 [kA/m].
15. A method of manufacturing exothermic elements for hyperthermic treatment having, as a main component thereof, ferromagnetic layers coated outside nucleus particles,

wherein, after performing a deposition treatment for depositing and forming layers of iron hydroxide around said nucleus particles by a liquid phase process, a heating

treatment is performed in a reducing atmosphere to change the iron hydroxide layers formed around said nucleus particles to a ferromagnetic material comprising gamma hematite, to form said ferromagnetic layers,

whereby said ferromagnetic layers comprise an oxide having a magnetic domain structure mainly formed of at least one of a single domain and a pseudo-single domain.

16. A method of manufacturing exothermic elements for hyperthermic treatment as defined in claim 15, wherein said nucleus particles have a mean diameter of 0.1 to 10 $\mu$ m, a coefficient of variation in particle size thereof being at most 15%.

17. A method of manufacturing exothermic elements for hyperthermic treatment as defined in claim 15, wherein said heating treatment is carried out at a heating rate of at most 5°C/min. within a range of 100 to 500°C.

18. A method of manufacturing exothermic elements for hyperthermic treatment as defined in claim 17, wherein said heating rate is at most 1°C/min.

19. A method of manufacturing exothermic elements for hyperthermic treatment as defined in claim 15, wherein said heating treatment is carried out to reduce said iron hydroxide layers by placing and rotating, in a cylindrical drum, said nucleus particles with said iron hydroxide layers formed thereon.